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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------------------|------------------|
| 10/768,341 | 01/30/2004 | Joel P. DeSouza | YOR920030639US1 (17341) | 6381 |
| 23389 | 7590 | 10/16/2006 | EXAMINER FOURSON III, GEORGE R | |
| SCULLY SCOTT MURPHY & PRESSER, PC 400 GARDEN CITY PLAZA SUITE 300 GARDEN CITY, NY 11530 | | | ART UNIT 2823 | PAPER NUMBER |

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/768,341 | DESOUZA | |
| | Examiner | Art Unit | |
| | George Fourson | 2823 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sadana et al 5,930,643.

If obtainment of stoichiometric oxide uniformly distributed therein is inherent in the disclosed process of the instant invention then the same result would be obtained by the process suggested by Sadana et al because the same materials are treated in the same manner as in the instant invention.

Sadana et al discloses the steps:

- a) masked, base implantation of oxygen ions with a dose greater than $5 \times 10^{16} \text{ cm}^{-2}$, preferably $2 \times 10^{17} \text{ cm}^{-2}$, ion beam current of 5-60 mA, energy of 30-400 keV at temperature greater than 200°C ;
- b) room temperature implantation of oxygen ions with a dose of $1 \times 10^{14} - 1 \times 10^{16} \text{ cm}^{-2}$, energy of 50-200 keV, at a temperature less than 300°C , shallower than the base implant (col.4, lines 40-41);
- c) temperature ramp up and soaking at 1000°C for 5-120 min with an oxygen content of 0.1-10%, ramp up to $1300\text{-}1375^{\circ}\text{C}$ with oxygen content of 5-100% oxygen with the balance Ar or N_2 , selective removal of the surface oxide formed with HF (columns 4 and 5).

With respect to claims 20 and 23, it would have been obvious to one of ordinary skill in the art to increase the temperature of the soak cycle to 1250°C and the oxygen content to greater than 30% with the expectation that a portion of the effect of the oxidation step would be accomplished in view of the disclosure that the soak cycle is optional. Further, see col.7, line 12 where 100% O_2 content in the soak cycle is disclosed. With respect to the remaining claims, there is overlap between the recited conditions and those disclosed and pointed to above.

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With respect to claims 7 and 8, the room temperature ion implantation step could be labeled as multiple steps.

Applicant argues that by claiming the properties of the oxide produced the claim requires employing a portion of the ranges disclosed by Sadana et al that produces critical or unexpected results. However, objective evidence is required. See MPEP 716.01(c).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Hovel et al '106 [0042-0043], Hovel et al '846 [0042, 0052], Bedell et al '487 [0082-0084, 0086],

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Fourson whose telephone number is (571)272-1860. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George Fourson
Primary Examiner
Art Unit 2823

GFourson
October 16, 2006